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PATENT
RESPONSE UNDER 37 CFR 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 3644

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on April 7, 2005.

Tammy Lightman

Appl No.	: 10/774,171	Confirmation No.	7203
Applicant	: Alfred F. Nibecker, Jr.		
Filed	: February 6, 2004		
Title	: PUMP		
TC/A.U.	: 3644		
Examiner	: Jordan M. Lofdahl		
Docket No.	: 51868/RWJ/N301		
Customer No.	: 23363		

**RESPONSE TO OFFICE ACTION
DATED FEBRUARY 10, 2005**

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Post Office Box 7068
Pasadena, CA 91109-7068
April 7, 2005

Commissioner:

Claim 1, the only remaining claim in the application, was rejected under 35 U.S.C. 102(b) as anticipated by Elson (US Pat. No. 5,538,398).

During a telephone interview April 6, 2005, the Examiner and applicant's attorney analyzed the differences between the applicant's claimed invention and the structure disclosed in the Elson reference.

In the applicant's claimed invention (as shown in Fig. 4 of the application), a pumping piston 72 reciprocates in a cylinder 32, which has an inlet 78 (Fig.2) and an outlet 102 (Fig. 4). A high pressure housing 82 has an inlet 104 connected to the

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outlet 102 of the pump cylinder. A check valve 98 is mounted between the pump cylinder outlet and the high pressure housing inlet. A discharge valve 119 (referred to as a firing valve in the application on page 16, line 15) is mounted in the high pressure housing outlet 158.

As the pump piston 72 reciprocates in the cylinder 32, air (or other gas) is driven through the check valve 98 and into the high pressure housing where it is confined by the check valve and the discharge valve 119. The piston is reciprocated as many times as necessary to build up the desired pressure within the high pressure housing. Thereafter, gas is released from the high pressure housing by actuating the discharge valve. In the embodiment shown in Fig.4, released gas flows from left to right, and up firing conduit 181 (see the application at page 21, line 22) to drive a pellet or projectile 186 through the barrel of the gun shown in Figs. 1 and 6. Scaled-up versions of the invention can be used to drive much larger loads, such as catapulting aircraft from the deck of a ship, or driving a missile through a launch tube of a submarine.

Referring to the Elson patent, Figs. 1 and 2, as the piston 16 reciprocates in the cylinder 12, air is alternately drawn into the proximal end 56 and the distal end 61 of the Elson pump. With each stroke, air is forced through the piston 16, into the tubular piston rod 18, and out valve stem connector 44. Fig. 3 shows that part of the Elson pump cycle where the piston 16 moves from left to right, compressing air in the proximal end of the cylinder 12. Inlet flex valve 68 is forced closed during this part of the cycle. Compressed air flows past outlet valve

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26b, into the tubular piston rod 18, and out valve stem connector 44. Fig. 4 of the Elson patent shows that part of the cycle when the piston is moving from right to left to force air from the cylinder through outlet valve 26a and into the tubular piston rod for discharge through valve stem connector 44. As shown in Fig. 4, inlet valve 68 is open during this part of the cycle so that a fresh charge of air can enter the cylinder for pumping as described for that part of the cycle shown in Fig. 3.

With the Elson pump, no air is stored in a high pressure chamber, and there is no discharge valve in a high pressure chamber, as required by applicant's claim 1.

Nothing in the Elson patent discloses or even suggests putting a discharge valve in the tubular piston rod to make it serve as a high pressure chamber. That would defeat the purpose of the Elson pump, which is to deliver air to a bicycle tire with each stroke of the pump.

In summary, the flex valve 68 shown in the Elson patent cannot operate as a discharge valve, as indicated in the Office action. Instead, valve 68 is an inlet valve.

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In view of the above explanation, applicant requests that the final rejection be withdrawn, and that the application be passed to issue.

Respectfully submitted,

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626/795-9900

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